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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/821,442	04/09/2004	Eric Bomstein	borne40606	1341
21587	7590	05/03/2005	EXAMINER	
ALTMAN & MARTIN 6 BEACON ST, STE 600 BOSTON, MA 02108			LEWIS, RALPH A	
			ART UNIT	PAPER NUMBER
			3732	

DATE MAILED: 05/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	Application No. 10/821,442	Applicant(s) BORNSTEIN, ERIC	
	Examiner Ralph A. Lewis	Art Unit 3732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

**Rejections based on 35 U.S.C. 112, second paragraph**

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-5, 9, 10 and 12-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, element "(b)", the diameter range claimed lacks specified unit. More specifically it is unclear if the " $\mu$ " (micro or  $10^{-6}$ ) designation is with respect to meters, inches, feet etc. In element "(c)" it is unclear what applicant is referring to with the "ISO" designation. Apparently "ISO" is in reference to the International Organization for Standardization, however, insufficient information is given as to what standard is being referred to. It is unclear why the diameter is not simply claimed in conventional units of meters or inches.

In claims 9, 10 and 12, note the comments above.

**Rejections based on Prior Art**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6 and 8-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Levy (US 5,622,501) in view of Okamoto et al (US 4,979,900).

Levy discloses a process for treatment of a patient's root canal (column 4, lines 23-26) wherein an optical probe 8 is provided having a distal tip 24 for insertion into a root canal. The distal tip is tapered so that "laser radiation is spread out along an extended section of the region being treated" (column 4, lines 13-16) rather than being concentrated at the tip of the probe. The device may be used for transferring laser radiation to destroy bacteria (column 6, lines 35-57). Levy suggests a Nd:YAG laser which generally operates at an infrared wave length of 1064 nm for destroying the bacteria (column 6, lines 36-37).

Levy is somewhat vague on the device's use for destroying bacteria in root canals, whether the root canal is first prepared by the standard technique of mechanically cleaning/clearing of tissue from the root canal with a conventional endodontic file before the optical probe is inserted and then the use of a conventional apical seal when the root canal is filled. Okamoto et al for a similar light conducting probe used for destroying bacteria in a patient's root canal teaches that first it is desirable to clean and prepare the root canal (column 1, lines 16-18, column 6, line 7) and then insert the probe into the prepared root canal where light is conducted at a sufficient energy to destroy the bacteria. To have first cleaned and prepared the root canal in the Levy method before inserting the optical probe to destroy the bacteria

would have been obvious to one of ordinary skill in the art in view of the teaching by Okamoto et al.

In regard to the "apical seal" limitation of element "(g)" in claim 6, applicant readily admits that apical seals are used in the prior art for sealing the root canal once it has been cleaned and prepared (see paragraph's 0017 and 0018) of applicant's specification. Merely using a prior art apical seal to seal the root canal in the Levy/Okamoto et al method once it has been cleaned and prepared would have been obvious to one of ordinary skill in the art.

In regard to claims 9 and 10, constructing the Levy probe of a size that fits within a prepared root canal would have been obvious to the ordinarily skilled artisan as a matter of routine.

Claims 1-5, 7 and 12-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Levy (US 5,622,501) in view of Okamoto et al (US 4,979,900) as applied above and in further view of Kataoka et al (US 5,374,266), Nakajima et al (US 5,300,067) and Rizioi et al (US 5,741,247).

In regard to the limitation that the optical probe be composed of the class consisting of sapphire and zirconium, Levy doesn't appear to disclose the material of the fiber optic probe when used with a Nd:YAG laser for destroying bacteria. Kataoka et al, however, teach that sapphire fibers may be used for conducting laser light in a medical laser (column 2, line 36); Nakajima et al teach that sapphire fibers may be used for conducting laser light in a medical laser device and Rizioi et al teach that zirconium

and sapphire fibers are advantageously used for conducting laser light in a medical laser. Merely, selecting conventional prior art sapphire or zirconium optical fibers for the optical fiber probe of Levy would have been obvious to one of ordinary skill in the art as an obvious selection of well known prior art material commonly used for such a purpose.


### Prior Art

Vassiliadis et al (US 5,324,200), Vari (US 5,503,559), Rizoiu et al (US 5,741,247), Hack et al (US 5,897,314), Deutsch et al (US 5,968,039), Liebermann et al (US 5,971,755), Kokubu (US 6,162,052), Daikuzono (US 6,679,837) and Kataoka et al (JP 2002017757) are made of record.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry concerning this communication should be directed to **Ralph Lewis** at telephone number **(571) 272-4712**. Fax (703) 872-9306. The examiner works a compressed work schedule and is unavailable every other Friday. The examiner's supervisor, Kevin Shaver, can be reached at (571) 272-4720.

R.Lewis  
April 20, 2005



Ralph A. Lewis  
Primary Examiner  
AU3732